

CLAIMS

1. A system for positioning dental X-ray apparatus, comprising

- an input and output device for interactive control,
- 5 - a storage area, in which at least one digitized dental X-ray image and information concerning the X-ray apparatus assignable to the digitized dental X-ray image are stored,
- 10 - a computer interface, via which information can be interchanged with the X-ray apparatus,
- means for selecting areas in the digitized dental X-ray image,
- 15 - a processing unit which effects calculations based on the digitized dental X-ray image, the relevant information concerning the X-ray apparatus, and the selected area, in order to ascertain control data for the dental X-ray apparatus,
- 20 - wherein the dental X-ray apparatus is controllable by said control data such that the selected area is covered when a dental X-ray image is made.

25 2. A system as defined in the previous claim, characterized in that the digitized X-ray image is an individual image of the patient.

3. A system as defined in the previous claim and comprising X-ray apparatus suitable for various types of image, characterized in that means for selecting the type of image are provided.

30 4. A system as defined in any one or more of the previous claims and comprising means for positioning a patient relatively to the X-ray apparatus, characterized in that the control data control said means for positioning the patient.

5. A system as defined in any one or more of the previous claims, characterized in

that the information concerning the X-ray apparatus consists of the coordinates of the trajectory which have been saved in relation to the digitized X-ray image.

6. A system as defined in any one or more of the previous claims, characterized in
5 that current and/or voltage parameters are saved in relation to the digitized X-ray image.
7. A system as defined in any one or more of the previous claims, characterized in
10 that information concerning the gray tones in the representation of the image are saved in relation to the digital X-ray image.
8. A system as defined in any one or more of the previous claims, characterized in
15 that computation for determining said control data takes into account the type of image.
9. A system as defined in any one or more of the previous claims, characterized in
10 that computation for determining said control data takes into account the purpose of diagnosis.
- 20 10. A system as defined in any one or more of the previous claims, characterized in
that patient-dependent data, such as size, weight, type, race, age, jaw shape, and/or previous treatments are taken into account when determining said control data.
- 25 11. A system as defined in any one or more of the previous claims, characterized by
means for automatically recognizing areas, particularly teeth, by pattern recognition algorithms.
- 30 12. A system as defined in any one or more of the previous claims, characterized in
that the selecting means are designed such that areas can be selected manually.
13. A system as defined in any one or more of the previous claims, characterized in
that statistical and/or stochastic linkings of the individual parameters are carried out.

14. A system as defined in any one or more of the previous claims, characterized in that means are provided for making series of radiograms at different positions starting from the selected position.

5 15. Dental X-ray apparatus, characterized by a system as defined in any one or more of the previous claims.

10 16. A method of positioning the emitter and/or detector of dental X-ray apparatus using an existing digitized dental X-ray image and information concerning the X-ray apparatus and assignable to the digitized dental X-ray image, wherein

- at least one digitized dental X-ray image is loaded and displayed,
- coordinates of those areas are determined, with reference to the digitized dental X-ray image, which are to be depicted in another X-ray image,
- information concerning the X-ray apparatus is loaded,
- computation is carried out on the basis of the digitized X-ray image, the relevant information concerning the X-ray apparatus, and the selected area, in order to ascertain control data which controls the dental X-ray apparatus such that the selected area can be depicted in a dental X-ray image.

20 17. A method as defined in the previous claim, characterized in that the digitized X-ray image is an individual image of the patient.

25 18. A method as defined in any one or more of the previous claims, characterized in that the type of image to be made by the X-ray apparatus is selected prior to the third step.

30 19. A method as defined in any one or more of the previous claims, characterized in that the control data control means for positioning the patient relatively to the X-ray apparatus.

20. A method as defined in the previous claim, characterized in that the information concerning the X-ray apparatus comprises coordinates of the trajectory which have been saved in relation to the digitized X-ray image, and a segment of the trajectory is calculated on the basis of the selected area.

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21. A method as defined in any one or more of the previous claims, characterized in that current and/or voltage parameters are saved in relation to the digitized X-ray image.

10 22. A method as defined in any one or more of the previous claims, characterized in that computation for determination of the control data takes into account the type of examination and/or the purpose of diagnosis of the patient.

15 23. A method as defined in any one or more of the previous claims, characterized in that patient-dependent data, such as size, weight, type, race, age, jaw shape, and/or previous treatments, are taken into account when computing the control data.

20 24. A method as defined in any one or more of the previous claims, characterized in that areas, particularly teeth, are automatically recognized by pattern recognition algorithms.

25 25. A method as defined in any one or more of the previous claims, characterized in that the areas can be determined manually.

26. A method as defined in any one or more of the previous claims, characterized in that statistical and/or stochastic linkings of the individual parameters are carried out.

30 27. A method as defined in any one or more of the previous claims, characterized in that series of radiograms are made at different positions starting from the selected position.